



Amend claims 38-40 as follows in re-written "clean" format.

--38. (Amended) The cathode of claim 37, wherein thermal spraying is by dc-arc plasma spray.--

--39. (Amended) The cathode of claim 37, wherein the layer has a thickness in the range from about 1 to about 200 microns.--

--40. (Amended) The cathode of claim 37, wherein the layer has a thickness in the range from about 5 to about 114 microns.--

REMARKS

The Specification has been amended to correct an inadvertent typographical error in the reference to the parent application of U.S.S.N. 09/019,061. Claims 38-40 have been amended to provide proper antecedent basis for the claims. No new matter has been introduced by these amendments.

Applicants hereby provisionally elects to prosecute Group II, claims 21-28 drawn to an electrode with traverse. Accordingly, only claims 1-20 and 29-36 have been requested to be canceled without prejudice.

Applicants respectfully traverse the Examiner's restriction between Groups II and IV. The Examiner states that "the two products of Groups II and IV are distinct because Group IV comprises pyrite which is not part of Group II." However, as noted in Applicants' Specification at page 2, line 14, for example, pyrite is the common name for FeS_2 , a metal sulfide as set forth in claim 21, Group II. Applicants have therefore not canceled claims 37-40 of Group IV, and request that these claims be examined together with the claims of Group II.

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If there are any additional charges with respect to this Response or otherwise,
please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

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Version with markings to show changes made.

A marked up version of the paragraph replaced on page 11 and continuing on page 12 follows:

“The active material feedstock may furthermore comprise a microstructured or nanostructured material, which after thermal spray results in electrodes with microstructured or nanostructured active material, respectively. As used herein, “microstructured” materials refers to materials having a grain size on the order of 0.1 to about 500 micrometers (microns), and “nanostructured” materials refers to materials having grain size on the order of about 1 to about 100 nanometers (where 1 nm = 10 angstroms). Nanostructured materials are thus characterized by having a high fraction of the materials’ atoms residing at grain or particle boundaries. For example, with a grain size in the five nanometer range, about one-half of the atoms in a nanocrystalline or a nanophase solid reside at grain or particle interfaces. Rapid interaction between the active materials and its surroundings are possible because of high surface area of the nanostructured materials. Therefore, the materials could sustain high current charging and discharging conditions. Thermal spray of nanostructured feedstocks to produce nanostructured coatings is disclosed in allowed U.S. patent application Serial No. [09/019061] 09/019,061, filed February 5, 1998, entitled “Nanostructured Feeds for Thermal Spray Systems, Method of Manufacture, and Coatings Formed Therefrom,” which is a continuation of U.S. patent application Serial No. [08/558,466] 08/558,133 filed November 13, 1995, which is incorporated herein by reference. Active material feedstocks comprising larger grain sizes are also within the scope of the present invention.”

A marked up version of the paragraph replaced on page 15 follows:

“D. Reprocessing of Nanostructured Pyrite.

Nanostructured pyrite is synthesized by aqueous solution method at low temperature (<90°C) in relatively short period (2-4 hours). Synthesized nanostructured FeS₂ has a particle size less than 100 nm. About 20 grams of sulfur powder was mixed with 200 grams of the nanostructured pyrite powder and ball milled in a ceramic jar for 24 hours. Thereafter, the uniformly mixed powder is placed in a vacuum oven, and dried at 150° C under vacuum for 12 hours. The treated powder then is dispersed in 10% PVA solution and the suspension is then spray dried at 200° C in accordance with U.S. Ser. No. [08/553,133] 08/558,133 above. The particle size of reprocessed powder is in the range of 1-200 microns.”

A "marked up" version of claims 38-40 follows:

"38. (Amended/Marked up) The [method] cathode of claim 37, wherein thermal spraying is by dc-arc plasma spray."

"39. (Amended/Marked up) The [method] cathode of claim 37, wherein the layer has a thickness in the range from about 1 to about 200 microns."

"40. (Amended/Marked up) The [method] cathode of claim 37, wherein the layer has a thickness in the range from about 5 to about 114 microns."